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Liew, Choong-Chin

<120> Method for the Detection of Gene Transcripts in Blood and Uses  
Thereof

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<150> US

<151> 2000-01-04

<150> US 60/115,125

<151> 1999-01-06

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<170> PatentIn version 3.2

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25 actcacgac caaactatga atttagatt cggatcaaac gaggattgat ccgagggacc 180

aacgttgtga taaatcttac gtcgtcttat atattaagti ttgtggagg atcggataag 240

30 tctatagtgt ttgtcacaga tagtcccgt ccaacaccca gaccatagga gtcgtctcc 300

ggaccgcggt ctaatggg 318

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tatcaaatta taaaccacc cacattactt aaaattttt acatttccca ataaaaaacc 120

45 caaataaaca aaaacttcca atctccattt aaaat 155

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 25 gaaaaanttt tccggggggc ccaccggga agggntnccg gggaaggg 168

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 cccacatttc cattttaat atatactgtg cttacaaat attataatat gttttaaatt 180  
 40 atgttcacag aagcacctgg tctgtgaatg gcatgccagc attaaaaaa ataagcattc 240  
 ttgaaatata tatttagttt ttaatgtgg taggaaaatc aaagccagag ggagtagaaa 300  
 caaaatttgt gattttctaa atactcttg gctgcaggga agaaaccacg tcccaggcga 360  
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accaagatgg tcaacaga

438

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 aaagggggaa ggcccccaa accggggggg gggnaaaaag gtgggtttcc cccttttcc 180  
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 45 caaattgggg ggnaaaccaa atttaagggg ggaagggggg gnccccccg ggaaaggccc 180



aaggggggaa aatttttccg ggggtgggtn gggggaacca atttaagggg ggggcccccg 240

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15

ctgtacttga actctaaaac tgttgagaa actcagtgt taccccaaca gattcatttc 180

aaatagctgt aaaaggtatg ttactccag aagaccagag ttgcttctt tgaacttctc 240

20

attccttggg cctaggaacc ctcatcacc tcacccaac gtcaaccag atcttctctt 300

ccataaacag cactccctca gggccctgcc tgacacaggc atagactgtc atgttgatt 360

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 tttagcggc accccaacaa caccaggccc tacttttcc aaggncgggg aagcccatgg 180  
 45 gttctgggna acgggcaatg cgggcttgca acggnggaa naaaacagn cccaaaagaa 240

tg 242

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 tctcagctca ctgcaacctc cacctctcag gagaattgct gaacctggga ggcggaggtt 120  
 15 gcaggagct gagattgcgc cactgccctc catcctgggc gacagagcaa gaacctgtct 180

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 15 aaggggggtg gggaagagcc aaatttcttt gggaanaaac gcccccttgg ggaaaanaag 180  
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 30 ggaagaattg tatgtgggag ttttaattgg tctcatttca ttggctataa ctgagtaca 180  
 aggagaaata taactgcaga ggagctttga aaatttagtt cagctgaggg taaaggaaga 240  
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 40 ttgaggcgaa aggactcgcg gatttgacgc ttgatgcggt tgcgctcgac ggcgagcttg 180  
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 agcagcagga cacttttgcc cgggagcttt accgcttggg gagtcgaaga ctgccttgna 300  
 45 ttgccgggga gtcagcagtc gctttttccc ggncgaagcc tcgaactcac cancctgtct 360

ggattaatta gacagcaaga cgcttgcggc ccctttggcg cgaacgaacn ncgaaaagga 420

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acgagccggg ctggagcggg gggaaaagca aatgtaggca taagtaacga caatgcgggc 120

45 gagaaccccg cacaccgaaa ggctaaggat tcctccgcta tgtcaatcaa cggagggtta 180

gtcgggtact aaggcgtag cgaaggcgaa gcgccgatgt gaaggggggtt aatattctc 240

cacttgccat gcgtgtgaat ccatgacgga gacgaagccg ggggtgcgtc ctgacggaag 300

5 tgggcgccag caggggcggc ctccgggcca aaccgaacct caggtcanac ttccaagaaa 360

agtgggtgaa acgccagcgc atggcaacct gtaccgcaaa ccgacacagg tagccggggg 420

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aagaaggaaac ccaccctngg ggccaaacaa aaacttaaaa acccccccat ttentncccc 180  
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 cctgtgaaac ccataaacag tgggaaatgg tgc 153  
  
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atttgtggtc ggaagctttg caaagagggg acctgggtct gactgacatg cgtggccact 120

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ggtgctcctg cgtttggact gtgcaggcct ctctatgct gatgcgtctc ccactcctg 180

agctaatttc tgctctgctc ctctgtgac atgtggcagc gtgggaaata gccactgtcc 240

35 cctgtccctg ctgttcttgg tgcacccag caccaggcca ctctgggagc cagggcagat 300

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5 actagatttt actgtagatg gtagataaaa gtccagtga aagcaaagat gtgtaatgtt 180

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ccngnctatc tactganga tgattgncag ngccnntggg tggcacnang ggnactgatg 360

25 ancancactg accctgccga cgccagangc cgcanatccg gagantncat gngacnata 420

aggttaccnc cttcnaccgg gcancaatct gcttctatgg tgaatgcaga ccatntagaa 480

30 ntctntcnct ataggcatga ttttnnncag tgcgtcagcc ttganaanga ancnnacttt 540

tgntagatga nnnngtctc nccctgngg ctnacaaatt ccancacctt tgggtggcngc 600

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gaagagtctt agttcattta ttggcccag aacctctaa tcccctgtta atttatgtca 240

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25 gcctaatagc agccaccatt aagaaagcgt tcgtccaca cccactacct aaaaatcgaa 360

tataactgac tcttcacacc caattggcca atcattcccc tataaaagaa ctatgttagt 420

30 ataagtaacc tgaaaacatt ctctctgca taagccctgc gttggattat atcctgcact 480

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ttaaatgaga aaaattaaat cataatgatt tcaaagataa cataggataa ttctttata 480

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agtctacaga gcaagttcca ggtcagccaa ggctatatat agaaactctg gcatgaaaaa 480

5 ccaaccaaac caaaccaaac caaaccagac cagaccagac cagaccagac caaaccaaac 540

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tatattcaa atgtcttgc aacagtgggt acttgctct atccttagct atacgtctcg 180

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 15 ngacgcgccg tacaggntna attatggan cttacatggn aaaggggcan ctcaatgtcc 120  
  
 cacag 125  
  
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 35 aaatgaatct gagatgaaat gagatgaaaa ntgatacgaa aatgatata aaaaatatga 180  
 cctgagatga aatgagatga aaaatgatac gaaaaatgat ataaaaaata tgacatgaaa 240  
 40 tgaaatgaga tgatatgaaa tgacataatg aatgatgaa ttgatgatat tgaaatgaaa 300  
 ttgaaagatg agatgaaatg atgagatgaa atgaaatgtt gaaatgatga agagatgtga 360  
 catgaaatga gctgaaatga gatgaaatga aatgagatta aatgatgaga tgaaaaatga 420  
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 gaaatgagat gaaataaaat aatgaaatga tgaaataatg aaatgaaaat gagatggaaa 180  
 30 tgatgagatg agaagaaatg atgagatgaa atgatgaaat gatgagatga ganaaaatga 240  
 gatgaaatga tgagatgaga tgaaatatga tgagttgaaa tgacataatg aatgaaatga 300  
 35 tgaaatggaa taatgaaatg gaaatgatga gctgagatgc aatgagttga aatgagatga 360  
 aatgatgaaa tgatgagatg aaatgatgaa atgaaataat gaaatgagat gaaataaaat 420  
 aatgaaatga tgaaataatg aaatgaaaat gaaatggaaa tgatgagatg agaagaaatg 480  
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<400> 74

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cataaaatga gatgaaatga gatgtaatga tggaatgaga tgagatgaaa tgagatgaaa 180  
20 tgatagatga gataaaatga tgatatgaaa tgatgagatg aatgatgaga tgatgagatg 240  
aatgatgaaa tgaaatgatg agatgagatg atgaaatgaa atggtgagat gaaatgatg 299

25 <210> 75  
<211> 155  
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30 <400> 75  
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35 tgagatgaca tgaaataatg aaacgaaatt gaaat 155

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<400> 76

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ctacttnaga ngaantcctc gcaaaatcct tgaatcaccg cttcagtga gtgatcac 120

cgccatgaaa ttctgctcg attagcttac gttgttga tagaggcaa acaaggctgt 180

45 tatcggtagc aggaatgat gttcgatttc gtagaatag cctgagagac ggcgaaact 240

ctcacgagag gcagcaggcg cgtaaattac ccaattacaa caagtagagg tagcgaagga 300

aaatatgagg ggtggcaagg tttgcctgt tacattctca aatggaagca aattagatat 360

5

gtcattg 367

<210> 77

10 <211> 257

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atagaaatca ttatttctgt gggatggata attgggccaa attgtaaaat attttaacta 120

30 tcagtgtttg gggtttattt ttaaaagaat aggggtgccac cagatgttct ttagtggagg 180

agaaatgagg ccagagtgcac tgcctagaaa attaagttgg taaattaatc acttttttct 240

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<210> 78

<211> 373

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 30 tattaccaa atattggac cattantaaa gantagggcc aaccnaatt ttcttgaaa 180  
 ttccggtta atagccgtta aatgtttta cccatttcat attgatacc ttaaattata 240  
 35 ataatggatt ttattgttaa attgtgtgtg tgtggtgtgt atgccctgtc ttctcctc 300  
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35 ccttgatggt caagtattta agaccctatg cnaatatttt ttaccttttc taataaacca 120

tgtttggt 128

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45 <220>



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ggccaggcct tcctttaa aaaaaatnac cgttttngg gggangnaac ctttaaagg 120

ggaaaanaaa tccttttaa anggaantcc aagggaagga ncctgnncaa nactcccn 180

30 ccaataaaaa aaacntttt ggaaangggg aaa 213

<210> 81

35 <211> 443  
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<400> 81

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tgatgaaatg agatgagatg agaagaaatg acttgatgag atgagataaa atgatgaaat 120

gaaatgaagt gaaatgaaat tgaaatgaga tgagatgaaa tgagataaaa tgatgagatg 180

15 aaatgagaag aaatgagatg aaatgatgaa atgatgagat gagatgaaaa atgatgggat 240

gagaaatgag atgaaatgat gggatgaaat gaaatgaaat aatgaaataa tgaaatgaaa 300

20 tgaattgata atattgaagt gaaattgaaa gatgagattg gatgaaatga tgagatgaaa 360

tgaaatgttg aaatgaaatg aagagatgta acatgaaatg agctgaaatg atgatgaa 420

atgaaatgaa atgagattaa atg 443

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<210> 82

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 25 gacctctgaa tgtattantg anncaagtga tagccaagat attttgaaga aaaatagata 120  
 ntagggacct gctctataag cccatcataa ttattatga agttataaca agtaaaacag 180  
 taaggatatt ggcatggaat agagaaccca gaaacagacc caatgcatgg gtacaggata 240  
 30 taacacaggg aaatgaggga caatatatgg ttctgggata attatttata tggggaaaat 300  
 aaagaaattg gatccctacc tcacacatac aaaaaaaatc ataattgaat taaaaacttg 360  
 35 catgtgaaag gaaagacttt aaaacattta gaaaaagtat tggaggctat gatcttgggg 420  
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 15 aggaaggaag gaagg 135

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 20 <212> DNA  
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 gagttgcctt ctgtaagtgc ccctactatc aaggtttcat ggaaaatcta ggcaaggcag 120  
 aacttcctca gaaggacaag agacaaagaa gtgggggagg ccctcctatc catagctgag 180  
 35 agggtttatt ctttgtggtt ctgctgtcag agcctttgga tgtctgatct gagatggagc 240  
 aaccccgact agacagaact ttgtagattt tgggggggtt aaaaggcctc aagcaaattc 300  
 40 taaaactttc ttgaacccc ctggcatagg ctgagtttcc ctgact 346

<210> 85  
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 45 <212> DNA  
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<400> 85

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5 gaaaagaaaa tggtttttt tgccgaaatc aaccgggtaa 100

<210> 86

<211> 201

10 <212> DNA

<213> Human

<400> 86

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15 gaaaagagga agaaacgctt ttaggaggtt aaggattaaa gtaaaaatta ttttgacata 120

attacctctt tttgtacca ctcttaaagg ccaggaacat atttgagaa gcctagtgt 180

20 atgtaacagt gtggggtttc a 201

<210> 87

<211> 531

25 <212> DNA

<213> Human

<400> 87

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tcttttacc cggcactcgg gtccaccctc gcggcaccag aggtattctc cggcgagtcg 180

35 ttaaccatcg caatcgccga ccgagtttaa ggaccactcc ccacctttct cattagttaa 240

ggagaacgct actttacccc atagacggag aaatcgctac tcaactacca ggcgcgcgcc 300

gtcgagtccc tcttctctc tttatgcatt tagagcgctt tcgtaagagt tttccctaga 360

40 ttcttctaag cgtagcgcgt ctactccaat gtttcgtta atccagcccg aactaacgcc 420

gcggaggagt cgatccgtct actcctatcc cgtcggctcg gatttactac aggagctaag 480

45 aaaacaaaa gtaccagccc taaaggaaag tcaaaggacg cccgtaaaaa a 531

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 10 cattcgggtcc agtgcctcgc cctattagcc cttagccca ccgtttctaa aactcccaga 120  
 acagccaaac cgtgccgcc aaggcctccg tcgttttata atatattccg ttacgtata 180  
 aggaacgaac ccccttcat taccacggtc ccgcgtccgc ctcttctcc attcgcaaca 240  
 15 gttctattcc ttacgcctc ccgtacctgc ttccagaaca tcgcaccgcc atagtcgaaa 300  
 gatagcaaag attaccagc ttctattcct cgccccagag ccgagtaaatt cgaagttat 360  
 20 agaggcggaa tccaaccatt caagagttat aacaagttat cggcactcgg gggatcagaa 420  
 tataaactta atgtcccctt tattctcccg gacgcccctt ttaaccatt ctctctatct 480  
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<210> 89  
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 30 <213> Human

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 40 ttccaccggc ctggttttgg ttttccata attaattaac caggggggncc anttaaaaaa 120  
  
 aattaaggna aggnntaaaa aatttaacca anggggggtt taaagggnnt tttttttta 180  
  
 aaaaaaaagg ttaaancccc ccctttttt ttgggttggg gtgggaaaat ttgggaanc 240  
 45 cttaaccccc ggggttttgg gtttttttgg ccaaaccccc ccggaaaaaa attaaaaaaa 300



ggaccgggtt ccattttaat gggatttggg aa

332

5 <210> 90  
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acgagatgag atgaaatgat gagatgaaat gatgaaatga gataagatga aaagagttga 300

45 tgagatgatg agatgaaatg agatgaaaag agatgaaatg agatgaaatg aaatgatgag 360

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gaaaaaatga aatgaaataa tgaaatgagg tgaaattaaa tgagatgatg aaattaaatg 480  
5 atgaaatgaa ataatgaaat ggaaatgaaa tggaaatgat gagatgaatg atgagatgaa 540  
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tgaatgagat gaaatggaat antggaangg aaattgattg gngatttgag atgaaatgag 660  
10 ntaaatngna tgaattaatg atgagatgaa atgntgaatg ccgggggtggn tgagatgaat 720  
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gaaatgaaat gatgaaatga atagatgtga catgaaatga gctgaaatga tgagatcaaa 180  
30 tgaaatgaaa tgagattaaa tgatgagatg aaaactgatg aaaacttaaa tgatgaaata 240  
atgaaatgaa aatgaaatgg aaatgatgag atgagaagaa atgatgagat gagatgagat 300  
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<400> 98

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5 tgcttggtag acgcttttga acccttcagc gctgaaagta 100

<210> 99

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10 <212> DNA

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gaaatgaaat gatgagatga aatgaggtga aatgaaatta gatgaaacgt aatgagatga 180

30 aatgacctaa tgaaatgaaa aatgaaatg aaataatgaa atgaggtgaa attaaatgag 240

atgatgaaat taaatgatga aatgaaataa tgaaatggaa atgaaatgga aatgatgaga 300

35 tgaatgatga gatgaaatga tgagatgaga tctaataatg agaggagatg atgagatgaa 360

ntgagatgaa aagagatgaa atgagatgaa accgaaatga tgagatgaaa tgaggtgaaa 420

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 5 cctctctgta gaaattgacc tggccatggc tcctgtgaat gatacgggtg ctattatccc 240  
 tgaacactgt aaaaatgaac ttgaaacag ttgggtagga cccaaacaga aaatgatgta 300  
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 aaaaatagat aatggtaatc caagcacgat ggtagccatc actctaattg ctttgggggtt 180  
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246

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<220>

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18

20

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18

40 <210> 105

<211> 24

<212> DNA

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45 <220>

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analysis

<220>

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24

10

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24

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45

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19

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15

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21

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25 <212> DNA

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22